03060102-130

(Tugaloo River/Lake Hartwell)

General Description

Watershed 03060102-130 is located in Oconee and Anderson Counties and consists primarily of the ***Tugaloo River*** and its tributaries as it flows through ***Lake Hartwell***. The watershed occupies 84,966 acres of the Piedmont region of South Carolina. The predominant soil types consist of an association of the Cecil-Hiwassee-Madison series. The erodibility of the soil (K) averages 0.25, and the slope of the terrain averages 11.5%, with a range of 2-25%. Land use/land cover in the watershed includes: 55.3% forested land, 31.7% agricultural land, 9.8% water, 0.7% forested wetland, 2.3% urban land, 0.1% nonforested wetland, and 0.1% barren land.

This portion of the Tugaloo River flows through Lake Hartwell and between the states of South Carolina and Georgia. Streams flowing into the river from the Georgia side are connoted with an asterisk. The Tugaloo River accepts drainage from Rock Creek*, Eastanolla Creek*, Choestoea Creek (Johns Pond, Freeman Pond, Norris Creek, Harbin Creek, Little Choestoea Creek), Crawford Creek*, Little Crawford Creek*, Whitworth Creek*, Shoal Creek*, Fairplay Creek, Paynes Creek*, Reed Creek*, Beaverdam Creek (Mud Creek, Cleveland Creek), Cranes Creek*, and Little Beaverdam Creek before merging with the Seneca River Watershed to form the Savannah River. There are a total of 126.2 stream miles and 9,756.6 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
SV-301	S	FW	NORRIS CREEK AT S-37-435, 1 MI S OF WESTMINSTER
SV-108	W/BIO	FW	CHOESTOEA CREEK AT S-37-49
SV-345	W/BIO	FW	BEAVERDAM CREEK AT S-37-66

Norris Creek (SV-301) - Aquatic life uses are fully supported. A significant increasing trend in dissolved oxygen concentration and significant decreasing trend in turbidity suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions. In addition, there is a significant increasing trend in fecal coliform bacteria concentration.

Choestoea Creek (SV-108) - Aquatic life uses are fully supported based on macroinvertebrate community, physical, and chemical data. Recreational uses are not supported due to fecal coliform bacteria excursions.

Beaverdam Creek (SV-345) – Aquatic life uses are fully supported based on macroinvertebrate community, physical, and chemical data. Recreational uses are not supported due to fecal coliform bacteria excursions. A total maximum daily load (TMDL) has been developed for SV-345 to address this impairment (see Watershed Protection and Restoration Strategies below).
A fish consumption advisory has been issued by the Department for PCBs (Polychlorinated biphenols) and includes Lake Hartwell within this watershed. A fish consumption advisory has also been issued by

the State of Georgia for mercury and PCBs for the Tugaloo River arm of Lake Hartwell within this watershed (see advisory p. 37).

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
CHOESTOEA CREEK TOWN OF WESTMINSTER WTP PIPE #: 001 FLOW: M/R	SCG645032 MINOR INDUSTRIAL
LITTLE CHOESTOEA CREEK OAKWAY ELEM. & MIDDLE SCHOOLS PIPE #: 001 FLOW: 0.015	SC0033944 MINOR DOMESTIC
HARBIN CREEK WEST OAK HS/OCONEE CO. SCH. DIST. PIPE #: 001 FLOW: 0.032	SC0038644 MINOR DOMESTIC
LAKE HARTWELL TOTAL ENVIRON/FOXWOOD HILLS SD PIPE #: 001 FLOW: 0.10 PIPE #: 001 FLOW: 0.20 (PROPOSED TIER) PIPE #: 001 FLOW: 0.40 (PROPOSED TIER) PIPE #: 001 FLOW: 0.80 (PROPOSED TIER) PIPE #: 001 FLOW: 1.40 (PROPOSED TIER)	SC0022357 MINOR DOMESTIC
LAKE HARTWELL SCDOT WELCOME CENTER/FAIRPLAY PIPE #: 001 FLOW: 0.015	SC0026638 MINOR DOMESTIC
LAKE HARTWELL NACO/CAROLINA LANDING CAMPGROUND PIPE #: 001 FLOW: 0.04	SC0022063 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / ***FACILITY TYPE***	***PERMIT #*** / ***STATUS***
STONE BRIDGE CORP. C&D	372900-1301 INACTIVE

Land Application Sites

LAND APPLICATION SYSTEM / ***FACILITY NAME***	***ND#*** / ***TYPE***
SPRAYFIELD	ND0065927

CHICKASAW UTIL./CHICKASAW POINT	DOMESTIC
SPRAYFIELD	ND0067237
LAKESIDE INN	DOMESTIC

Growth Potential

There is a moderate potential for growth in this watershed, which contains portions of the Town of Westminster and Lake Hartwell. Particular emphasis will be placed on residential, commercial, and industrial growth and development along the U.S. Hwy 123 corridor, beginning with Westminster and extending towards the City of Seneca. I-85 crosses the lower portion of the watershed, and development pressures continue along the lakeshore.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for Beaverdam Creek to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. Agriculture and Silviculture are the two major land uses in the watershed and both can be sources of fecal coliform. Targeting agricultural land for reduction of bacteria is the most effective strategy for this watershed. The TMDL translates to an agricultural reduction of 55%. Forested lands are not targeted for reduction, as there are currently no acceptable means of reducing fecal coliform sources within that land use.

A TMDL implementation project with Clemson Extension as the lead organization has been funded through USEPA under a §319 grant through SCDHEC. This project will be working with local farmers and homeowners to cost share with the installation of Best Management Practices (BMPs) to reduce the fecal coliform bacteria loading. Some of the partners on the project include Natural Resources Conservation Service (NRCS) and Oconee County Soil and Water Conservation District. The project is scheduled to be completed by December 2004.

Special Projects

TMDL Implementation Underway in Coneross Creek/ Beaverdam Creek Watersheds

Funded through a §319 grant from EPA, a new effort to combat bacterial pollution in two adjacent watersheds in Oconee County began in December 2002. Acting as lead organization, the Clemson Cooperative Extension Service (CES) has initiated a two-year project that promises to implement bacteria runoff control measures in critical areas throughout the watersheds.

Reductions in fecal coliform bacteria were called for in the Coneross Creek and Beaverdam Creek Total Maximum Daily Load (TMDL) developed by SCDHEC in 1999 and 2000, respectively. If successful, this implementation project will result in improved water quality and consistent attainment of water quality standards for fecal coliform bacteria (FC). Two SCDHEC monitoring stations in the Beaverdam Creek watershed showed that state standards for FC were chronically exceeded and that the load would need to be reduced by over 50% to meet the standard. An approximate 50% reduction is also needed in the Coneross Creek watershed to meet FC standards there.

To correct this problem, the project sponsor will implement a combination of BMPs on a watershed scale that include detailed waste and grazing management procedures, engineered BMPs focusing on riparian zones, septic system upgrades including constructed wetlands, and an extensive educational campaign targeted towards homeowners. Clemson CES has recruited a number of partners in this effort including the USDA Natural Resources Conservation Service, Oconee Co. Soil and Water Conservation District, Oconee Co. Beef Cattlemen's Association and the DHEC Oconee Co. Health Dept. The Beaverdam Creek/Coneross Creek TMDL Project, using the diverse expertise available in this partnership, should result in improvement to water quality in these watersheds.